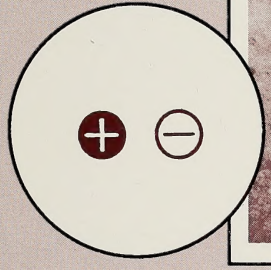
.2.1991-399

University of Alberta Library
0 1620 3681793 8

MODULE 2

LEARNING AIDS
BOOKLET



MATHEMATICS 7

Distance Learning

Alberta
EDUCATION

CANADIANA
C.2
AUG 8 1991

Mathematics 7

Module 2

Whole Numbers and Integers

LEARNING AIDS BOOKLET

Mathematics 7
Learning Aids Booklet
Module 2
Whole Numbers and Integers
Alberta Distance Learning Centre
ISBN No. 0-7741-0151-2

Cover Photo: WESTFILE INC.

ALL RIGHTS RESERVED

Copyright ® 1991, the Crown in Right of Alberta, as represented by the Minister of Education, Alberta Education 11160 Jasper Avenue, Edmonton, Alberta, T5K 0L2.
All rights reserved. Additional copies may be obtained from the Learning Resources Distributing Centre.

No part of this courseware may be reproduced in any form including photocopying (unless otherwise indicated), without the written permission of Alberta Education.

Every effort has been made both to provide proper acknowledgement of the original source and to comply with copyright law. If cases are identified where this has not been done, please notify Alberta Education so appropriate corrective action can be taken.

UNIVERSITY LIBRARY
UNIVERSITY OF ALBERTA

CONTENTS

Exercise A: Reading and Writing Numbers 1

Exercise B: Finding Sums 5

Exercise C: Finding Differences 11

Exercise D: Fnding Products 19

Exercise E: Finding Quotients 27

Exercise F: Factors 33

Exercise G: Prime and Composite Numbers 35

Exercise H: Powers 39

Appendix 45

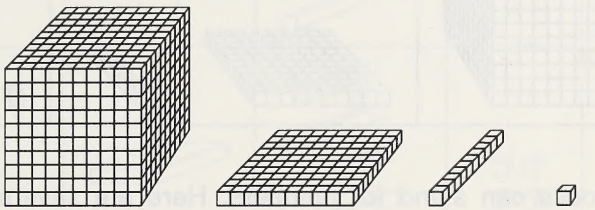
Digitized by the Internet Archive
in 2016 with funding from
University of Alberta Libraries

https://archive.org/details/mathematics702albe_2

READING AND WRITING NUMBERS

Exercise A

The concrete materials you will be working with in this booklet are called **base 10 blocks.** There are four basic pieces in the set.



Block Flat Long Unit

Discover the relationships among the pieces. Ask yourself these questions.

- How many units make a long?
- How many longs make a flat?
- How many flats make a block?

In each case the answer is 10.

10 units = 1 long

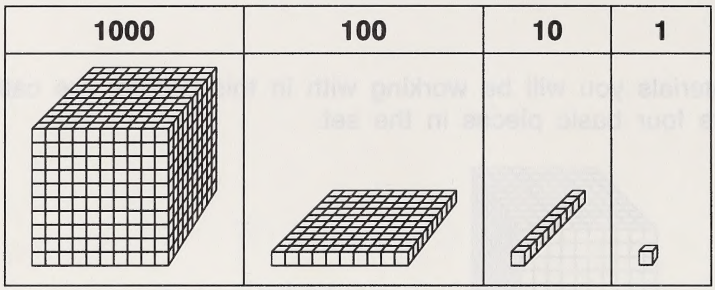
10 longs = 1 flat

10 flats = 1 block

Each piece is 10 times the size of the next smaller piece.

1 block = 10 flats = 100 longs = 1000 units

Think of the units as **ones**, the longs as **tens**, the flats as **hundreds** and the blocks as **thousands.**

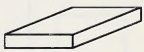
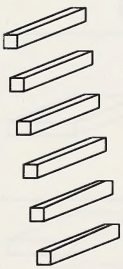
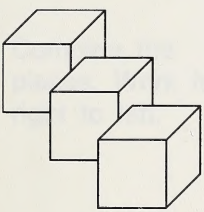
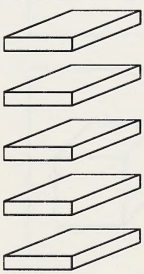
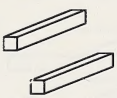
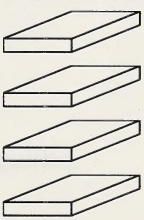
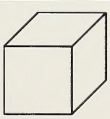


Groups of base 10 blocks can stand for numbers. Here are several examples.

Blocks	Flats	Longs	Units	Number Represented
				= 9
				= 12
				= 2235
				= 1041

Answer the following questions. Turn to the appendix of this booklet to check your answers.

1. Read the following numbers.

	Blocks	Flats	Longs	Units	
a.					= _____
b.					= _____
c.					= _____
d.					= _____
e.					= _____

2. Model the following numbers with your base 10 blocks.

   a. 17

   b. 100

   c. 693

   d. 1571

   e. 1004

Return to the *Module Booklet.*

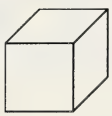
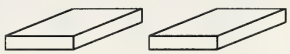
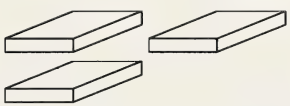
FINDING SUMS

Exercise B

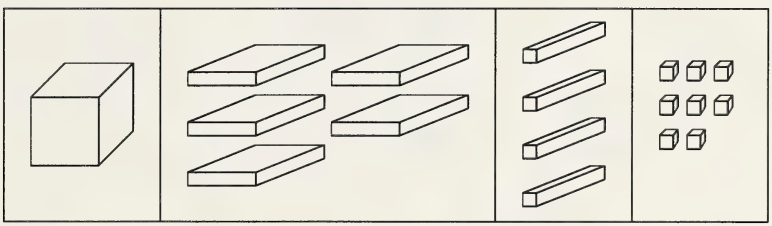
Your base 10 blocks will allow you to add in a concrete way.

Example: 1236 + 312

Step 1: Form the numbers.

Blocks	Flats	Longs	Units
			
			

Step 2: Combine the pieces. Work from right to left.



Step 3: Write the number sentence.

1236 + 312 = 1548

Note: No regrouping is required.

1. Model the following addition problems using base 10 blocks and write number sentences to describe your models. Check your final arrangements in each case. Suggested answers are in the appendix of this booklet.

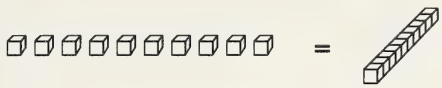
   a. 523 + 464

   b. 1274 + 305

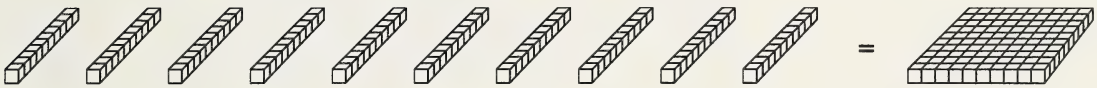
   c. 1603 + 200

Regrouping

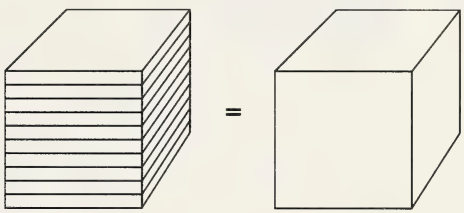
Adding sometimes involves **regrouping** or carrying. That is, when you reach 10 or more of any of the pieces, you trade 10 of that piece for 1 of the next higher piece.



10 units = 1 long



10 longs = 1 flat

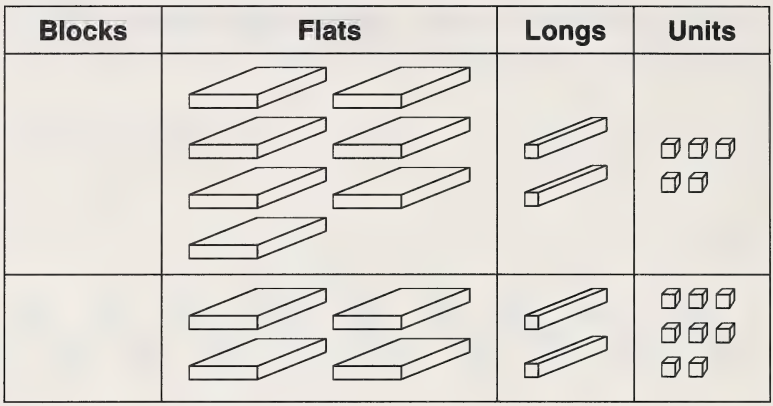


10 flats = 1 block

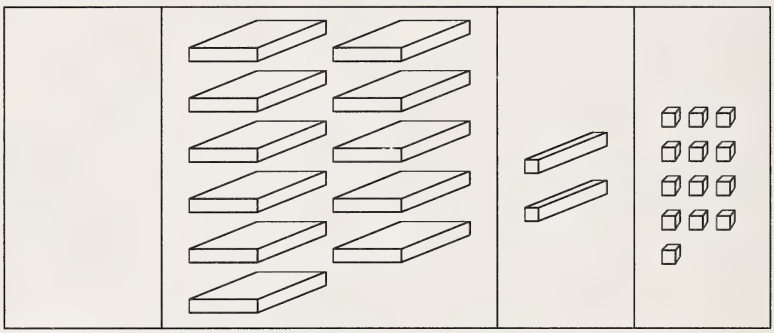
Study the example on page 8.

Example: 725 + 428

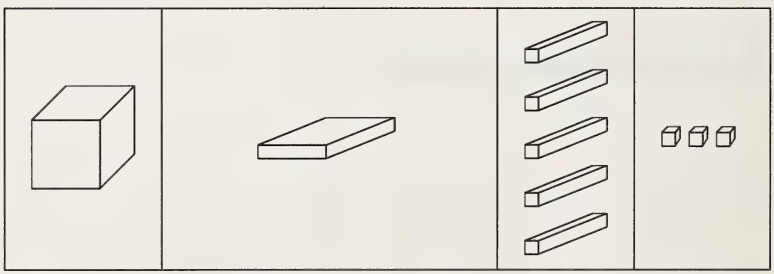
Step 1: Form the numbers.



Step 2: Combine the pieces. Work from right to left.



Step 3: Trade 10 units for 1 long. Trade 10 flats for 1 block.



Step 4: Write the number sentence.

725 + 428 = 1153

Note: Regrouping was required.

2. Model the following addition problems using base 10 blocks and write number sentences to describe your models. Have your learning facilitator check your final arrangements in each case.

   a. 29 + 6

   b. 91 + 975

   c. 805 + 75 + 292

Return to the *Module Booklet.*

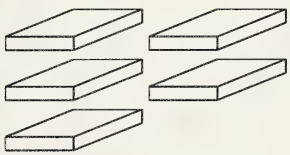
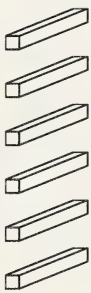
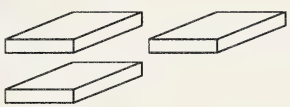
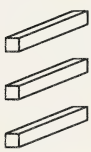
FINDING DIFFERENCES

Exercise C

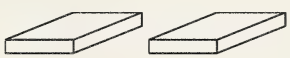
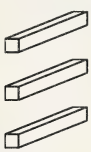
Your base 10 blocks will allow you to subtract in a concrete way. To subtract with base 10 blocks you take away pieces.

Example: 564 – 331

Step 1: Form the numbers.

Blocks	Flats	Longs	Units
			
			

Step 2: Take away the required pieces. Work from right to left.

Step 3: Write the number sentence.

564 – 331 = 233

Note: No borrowing was required.

1. Model the following subtraction problems using base 10 blocks and write number sentences to describe your models. Check your final arrangements in each case. Suggested answers are in the appendix of this booklet.

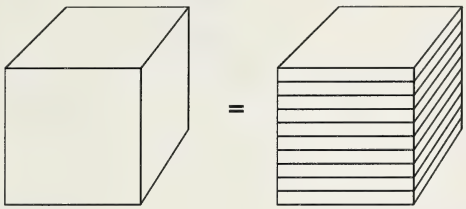
   a. 77 – 35

   b. 645 – 432

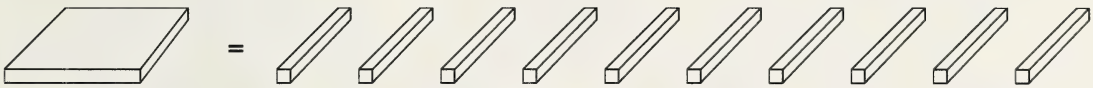
   c. 1278 – 1166

Regrouping

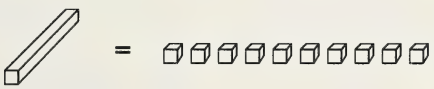
Subtracting sometimes involves regrouping or borrowing. That is, you must trade one higher piece for 10 pieces of the next lower value.



1 block = 10 flats



1 flat = 10 longs

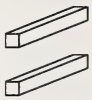


1 long = 10 units

Study the examples on pages 14 to 16.

Example: 20 – 2

Step 1: Form the numbers.

Blocks	Flats	Longs	Units
			

Step 2: Begin with the units. You cannot take away 2 units from 0 units.

Trade 1 long for 10 units.

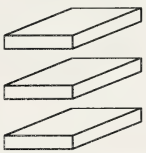
Step 3: Take away the required pieces. Work from right to left.

Step 4: Write the number sentence.

20 – 2 = 18

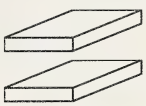
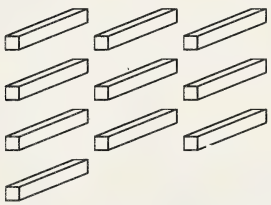
Example: 300 – 3

Step 1: Form the numbers.

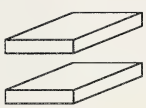
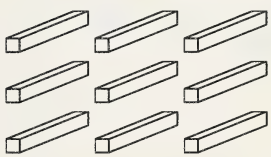
Blocks	Flats	Longs	Units
			

Step 2: Begin with the units. You cannot take away 3 units from 0 units. You have no longs from which to borrow.

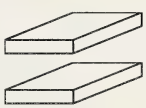
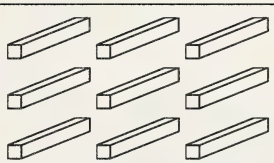
Trade 1 flat for 10 longs.

Step 3: Now trade 1 long for 10 units.

Step 4: Take away the required pieces. Work from right to left.

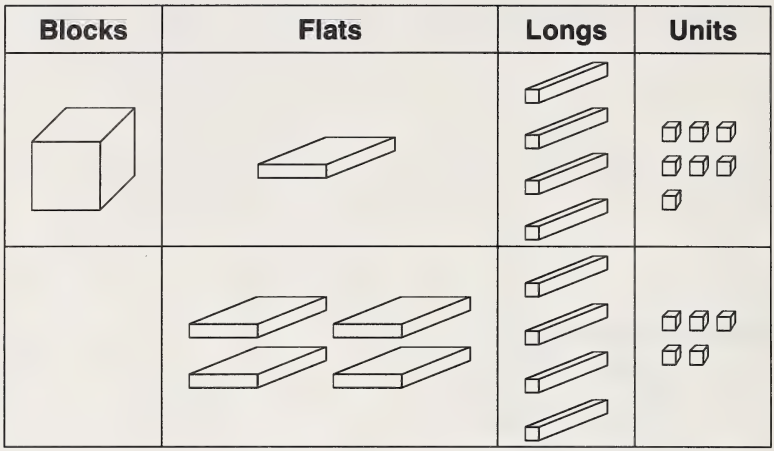
			

Step 5: Write the number sentence.

300 – 3 = 297

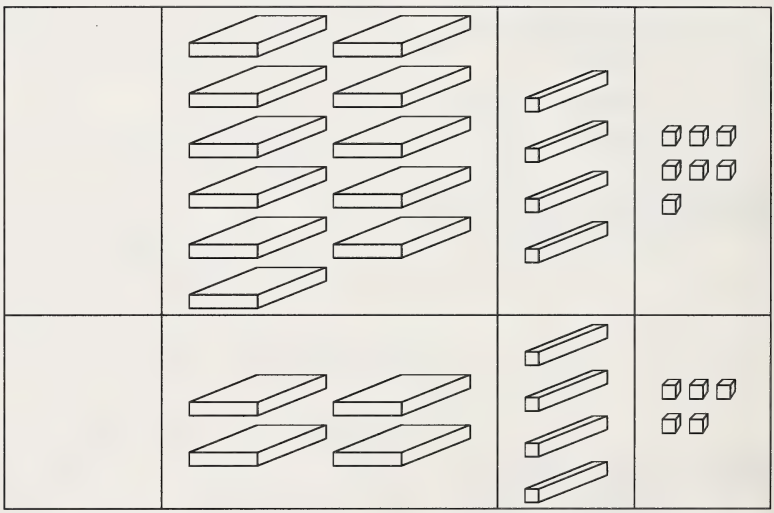
Example: 1147 – 425

Step 1: Form the numbers.

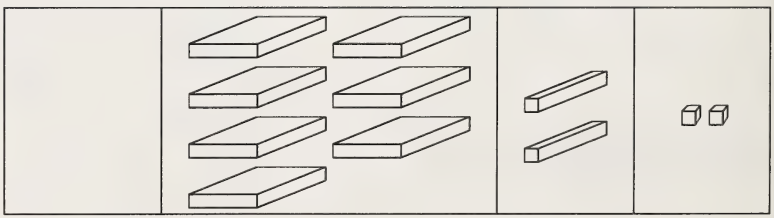


Step 2: Check to see if any regrouping is needed. You cannot take away 4 flats from 1 flat.

Trade 1 block for 10 flats.



Step 3: Take away the required pieces. Work from right to left.



Step 4: Write the number sentence.

1147 – 425 = 722

2. Model the following subtraction problems using base 10 blocks and write number sentences to describe your models. Check your final arrangements in each case. Suggested answers are in the appendix of this booklet.

   a. 81 – 54

   b. 1708 – 529

   c. 600 – 68

Return to the *Module Booklet.*

FINDING PRODUCTS

Exercise D

In a previous exercise you learned about adding. Multiplication and addition are related operations.

$3 + 3 + 3 + 3 + 3$ means 5×3 or 15

$5 + 5 + 5$ means 3×5 or 15

When you multiply with base 10 blocks, you must arrange the pieces into groups.

Example: 3×2

Step 1: Think about the meaning of multiplication. 3×2 can mean "3 groups of 2"

Step 2: Arrange the pieces into 3 groups of 2.

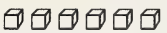
Step 3: Combine the pieces.

Step 4: Write the number sentence. $3 \times 2 = 6$

Here is another way to do this example.

Step 1: Think about the meaning of multiplication. 3×2 can mean "2 groups of 3"

Step 2: Arrange the pieces into 2 groups of 3.

Step 3: Combine the pieces. 

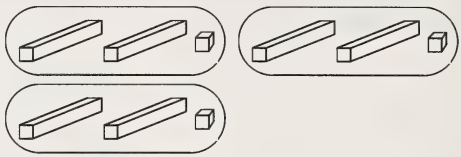
Step 4: Write the number sentence. $2 \times 3 = 6$

Now consider this problem.

Example: 21 × 3

Step 1: Think about the meaning of multiplication. 21 × 3 can mean 3 groups of 21

Step 2: Arrange pieces into 3 groups of 21.



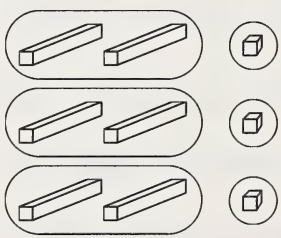
Step 3: Combine pieces.

Step 4: Write the number sentence. 21 × 3 = 63

When there is more than one place, multiplication can also be done this way. Remember

$$21 \times 3 = 20 \times 3 + 1 \times 3$$

Step 1: Form 3 groups of 20 and 3 groups of 1.



Step 2: Combine the pieces.

Step 3: Write the number sentence. 21 × 3 = 63

1. Model the following products using base 10 blocks and write number sentences to describe your models. Suggested answers are in the appendix of this booklet.

   a. 4×2

   b. 20×4

   c. $43 \times 2 = 40 \times 2 + 3 \times 2$

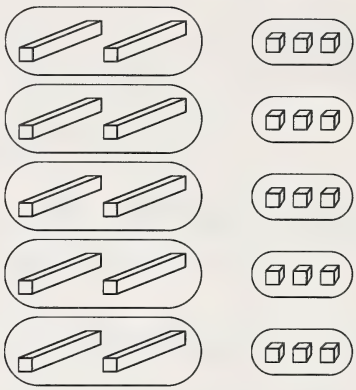
   d. $32 \times 3 = 30 \times 3 + 2 \times 3$

Regrouping

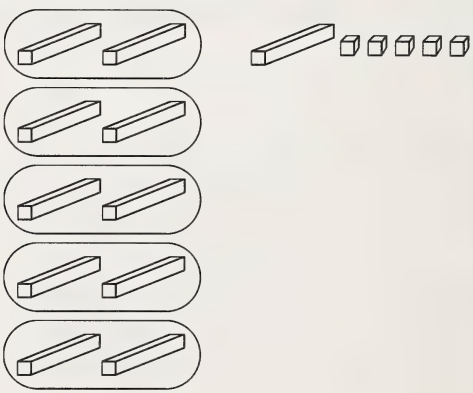
Sometimes it is necessary to regroup when you multiply.

Example: $23 \times 5 = 20 \times 5 + 3 \times 5$

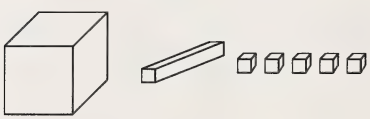
Step 1: Form 5 groups of 20 and 5 groups of 3.



Step 2: Combine the 5 groups of 3, and trade 10 units for 1 long.



Step 3: Combine the 5 groups of 20. Trade 10 longs for 1 flat. There are now 1 flat, 1 long, and 5 units.



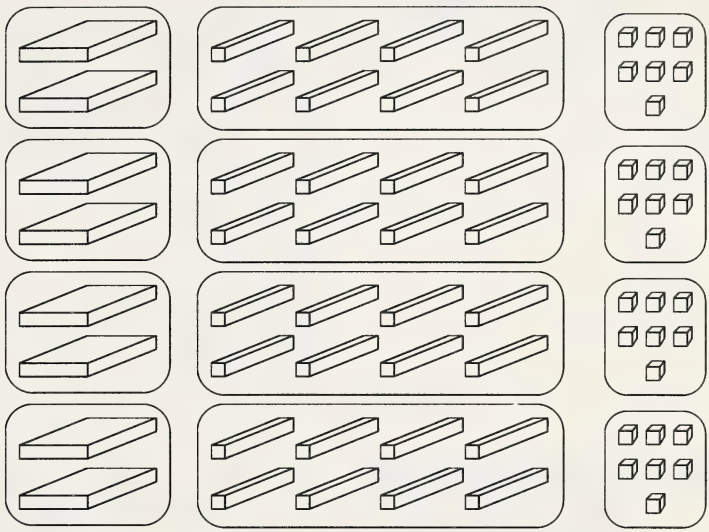
Step 4: Write the number sentence.

$23 \times 5 = 115$

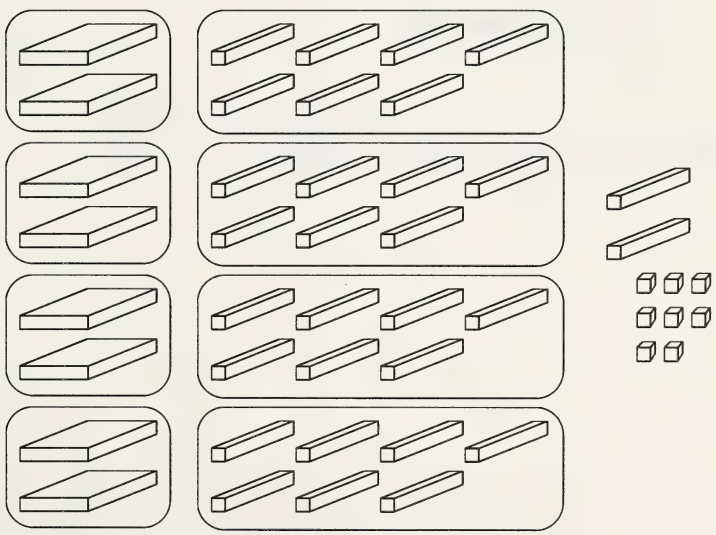
Here's another example.

Example: $287 \times 4 = 200 \times 4 + 80 \times 4 + 7 \times 4$

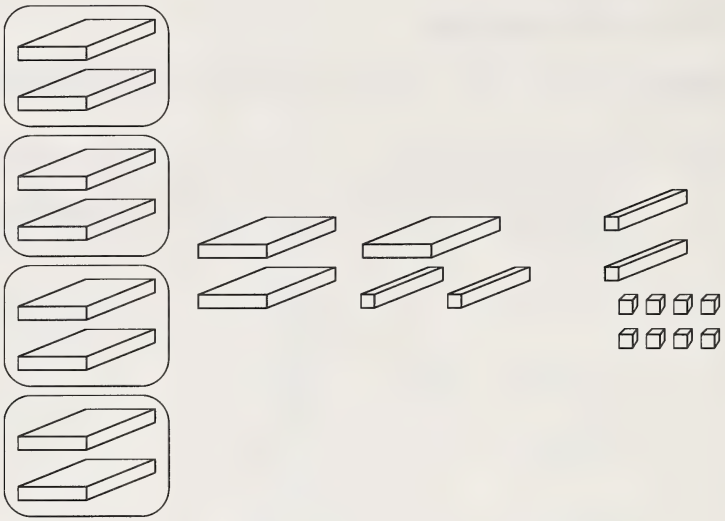
Step 1: Form 4 groups of 200, 4 groups of 80 and 4 groups of 7.



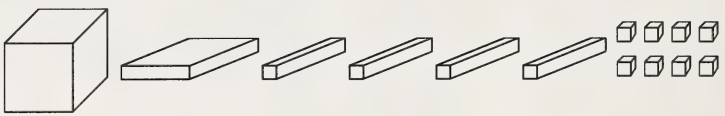
Step 2: Combine the 4 groups of 7. There are now 28 units. Trade 20 units for 2 longs.



Step 3: Combine the longs. There are now 34 longs altogether. (32 + 2 longs) Trade 30 longs for 3 flats.



Step 4: Finally, combine the flats. There are now 11 flats altogether. (8 flats + 3 flats) Trade 10 flats for 1 block.



Step 5: Write the number sentence.

$287 \times 4 = 1148$

2. Model the following products using base 10 blocks and write number sentences to describe your model. Check your final arrangements in each case. Suggested answers are in the appendix.

   a. 154 × 3

   b. 237 × 4

   c. 382 × 5

Return to the *Module Booklet.*

FINDING QUOTIENTS

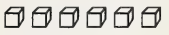
Exercise E

Division and multiplication are related. When you multiply with base 10 blocks you arrange the pieces into groups. When you divide you ask yourself these questions.

- How many groups are there?
- How many pieces are in each group?

Example: 6 ÷ 2

Step 1: Think about the meaning of division. 6 ÷ 2 can mean "In 6 there are how many groups of 2?"

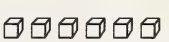
Step 2: Form the number 6. 

Step 3: Arrange the pieces into groups of 2.

Step 4: Write the number sentence. 6 ÷ 2 = 3

Here is another way to do this example.

Step 1: Think about the meaning of multiplication. 6 ÷ 2 can mean "There are 2 groups of how many?"

Step 2: Form the number 6. 

Step 3: Arrange the pieces into 2 groups.

Step 4: Write the number sentence. 6 ÷ 2 = 3

1. Model the following division problems using base 10 blocks and write number sentences to describe your models. Check your final arrangements in each case. Suggested answers are in the appendix of this booklet.

   a. 8 ÷ 4

   b. 24 ÷ 6

   c. 18 ÷ 3

Regrouping

Sometimes it is necessary to borrow when you divide.

Example: 27 ÷ 3

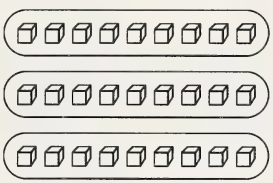
Step 1: Think about the meaning of division.

27 ÷ 3 can mean "In 27 there are 3 groups of how many?"

Step 2: Form the number 27.

Step 3: You cannot divide 2 longs into 3 groups. Trade 2 longs for 20 units.

Step 4: Arrange the pieces into 3 groups.



Step 5: Write the number sentence.

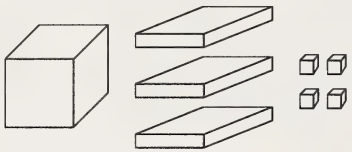
27 ÷ 3 = 9

Here's another example.

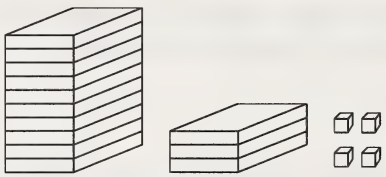
Example: 1304 ÷ 4

Step 1: Think about the meaning of division. 1304 ÷ 4 can mean "4 groups of how many?"

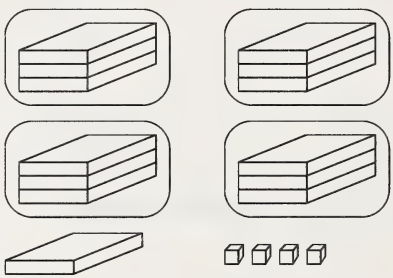
Step 2: Form the number.



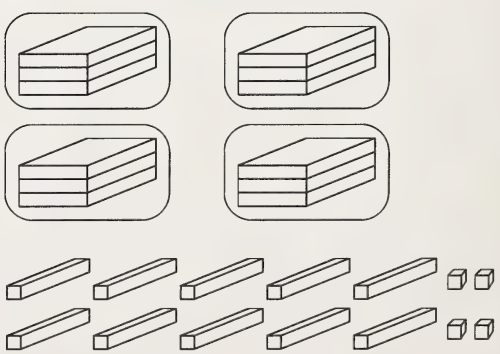
Step 3: You cannot divide 1 block into 4 groups. Trade 1 block for 10 flats.



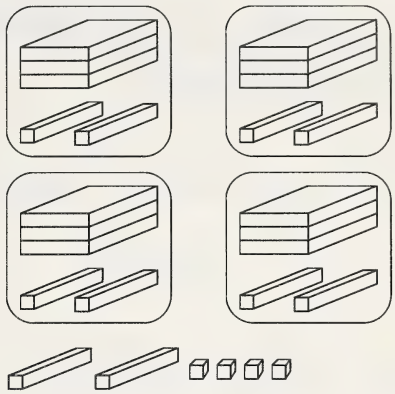
Step 4: You can group the flats into 4 groups of 3 with 1 flat left over.



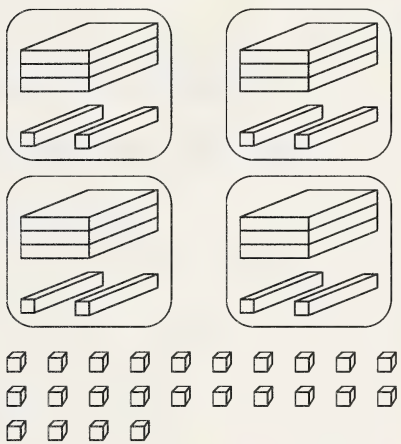
Step 5: Trade the leftover flat for 10 longs.



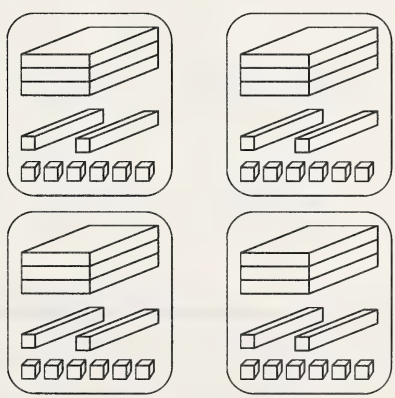
Step 6: You can group the longs into 2 groups of 4 with 2 longs left over.



Step 7: Trade 2 leftover longs for 20 units.



Step 8: You can group 24 units into 4 groups of 6.



Step 9: Write the number sentence.

$1304 \div 4 = 326$

2. Find the quotients of the following using base 10 blocks. Write the quotient as a number. Check each of your final arrangements. Suggested answers in the appendix of this booklet.

   a. 32 ÷ 8

   b. 125 ÷ 5

   c. 240 ÷ 6

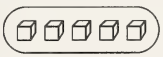
Return to the *Module Booklet.*

FACTORS

Exercise F

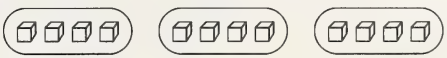
Earlier you examined multiplication. You learned that multiplication can involve grouping.

Example 1: 1 × 5 can mean "1 group of 5."



1 and 5 are factors.

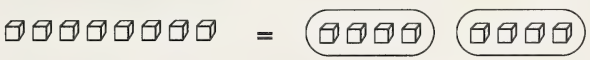
Example 2: 3 × 4 can mean "3 groups of 4."



3 and 4 are factors.

You also learned that division can mean the opposite of multiplication.

Example: 8 ÷ 4 can mean "In 8, how many groups of 4 are there?"



There are 2 groups so, 8 ÷ 4 = 2.

2 and 4 are factors of 8.

In this section you will learn to find the factors of a number.

Example: Find the factors of 12.

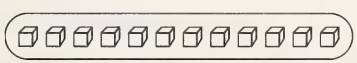
12 can mean "4 groups of 3."

3 and 4 are factors of 12.

12 can mean "6 groups of 2."

2 and 6 are factors of 12.

12 can mean "1 group of 12."



1 and 12 are factors of 12.

The factors of 12 are 1, 2, 3, 4, 6 and 12. 12 has this many factors because it can be grouped different ways.

Use base 10 blocks to find the factors of the following. Then check your answers. Suggested answers are in the appendix of this booklet.

a. 9

b. 15

c. 18

d. 20

e. 24

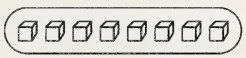
Return to the *Module Booklet.*

PRIME AND COMPOSITE NUMBERS

Exercise G

In the previous section you learned to group a number in various ways to find the factors.

Example: Find the factors of 8.



1 group of 8

2 groups of 4

4 groups of 2

8 groups of 1

1, 2, 4 and 8 are factors of 8.

In this section you will learn about prime numbers.

A **prime number** has exactly two factors which are itself and 1.

Example: Is 2 a prime number?

1 group of 2

2 groups of 1

2 is a prime number. It can only be grouped in 2 ways. Its factors are 1 and 2.

In this section you will learn about composite numbers.

A **composite number** has more than two different factors.

Example: Is 4 a composite number?

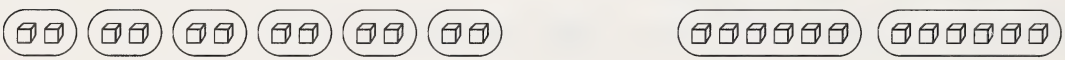
1 group of 4 2 groups of 2 4 groups of 1

4 is a composite number. It can be grouped in 3 ways. Its factors are 1, 2, and 4.

Example: Is 12 a composite number?

1 group of 12 12 groups of 1

3 groups of 4 4 groups of 3



6 groups of 2 2 groups of 6

12 is a composite number. It can be grouped in six different ways. It has 6 factors which are 1, 2, 3, 4, 6, and 12.

Note: The number 1 is neither a prime number nor a composite number. It is the only number which can be grouped in only one way.

The only factor of 1 is 1.

Use your base 10 blocks to determine if the following are composite numbers or prime numbers. Then check your answers. Suggested answers are in the appendix of this booklet.

a. 5

b. 6

c. 7

d. 8

e. 9

f. 10

g. 11

h. 13

i. 14

j. 15

k. 16

l. 17

m. 18

n. 19

o. 20

p. 21

q. 22

r. 23

s. 24

t. 25

Return to the *Module Booklet.*

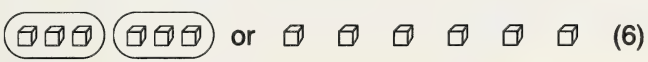
POWERS

Exercise H

You have learned about factors earlier.

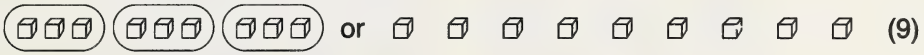
Example 1: In $2 \times 3 = 6$, 2 and 3 are factors.

2×3 can mean "2 groups of 3."

 (6)

Example 2: In $3 \times 3 = 9$, the factors are the same (3).

3×3 means "3 groups of 3."

 (9)

When factors are the same, the multiplication can be expressed as a power.

$3 \times 3 = 3^2$

3^2 is a **power**.

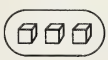
3 is called the **base**.

2 is called the **exponent**.

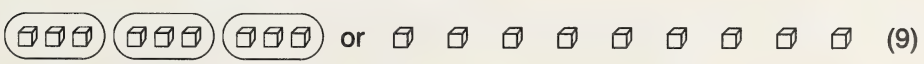
The power, 3^2, tells us that 3 has been used as a factor 2 times.

How are 3^1, 3^2, 3^3, 3^4, ... related?

$3^1 = 3$ means 1 group of 3.

 (3)

$3^2 = 3 \times 3$ means 3 groups of 3^1.

 (9)

Note: 3^2 can be arranged in a square.

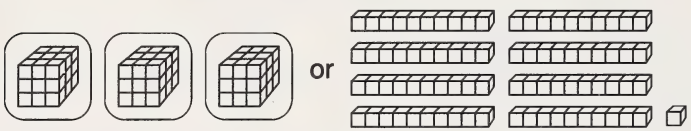
3^2 is read as "3 squared."

$3^3 = 3 \times 3 \times 3$ and means 3 groups of 3^2 or 27

Note: 3^3 can be arranged in a cube.

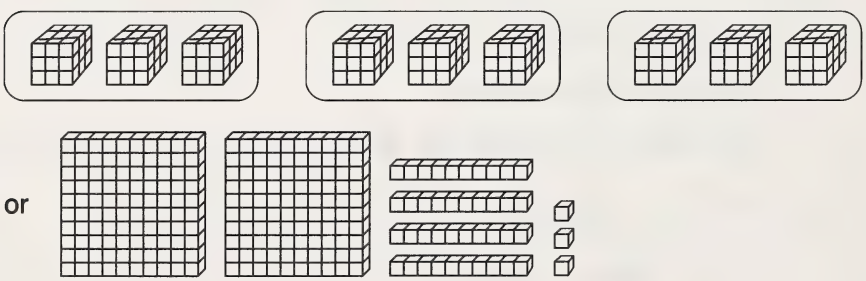
3^3 is read as "3 cubed."

$3^4 = 3 \times 3 \times 3 \times 3$ and means "3 groups of 3^3" or 81



Note: 3^4 is read as "3 exponent 4" or "the 4^{th} power of 3."

$3^5 = 3 \times 3 \times 3 \times 3 \times 3$ and means "3 groups of 3^4" or 243



Note: 3^5 is read as "3 exponent 5" or "the 5^{th} power of 3."

1. Use base 10 blocks to model the following. Then check each model. Suggested answers are in the appendix of this booklet.

   a. 2^1, 2^2, 2^3, 2^4

   b. 4^1, 4^2, 4^3, 4^4

   c. 5^1, 5^2, 5^3, 5^4

   d. 10^1, 10^2, 10^3, 10^4

2. What did you notice about the models for

   a. 2^2, 4^2, 5^2, and 10^2?

   b. 2^3, 4^3, 5^3, and 10^3?

Return to the *Module Booklet.*

Appendix

APPENDIX

Suggested Answers to Exercise A

1. a. 10

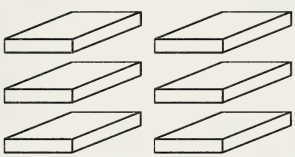
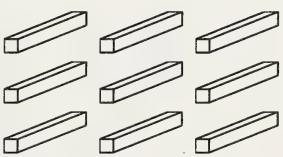
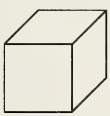
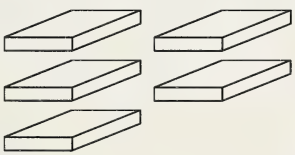
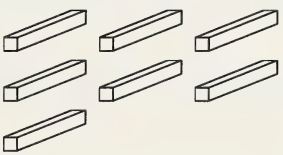
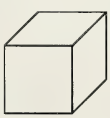
   b. 164

   c. 3527

   d. 408

   e. 1011

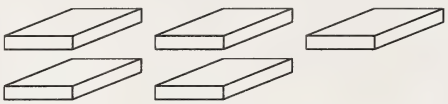
2.

	Blocks	Flats	Longs	Units	Number
a.					17
b.					100
c.					693
d.					1571
e.					1004

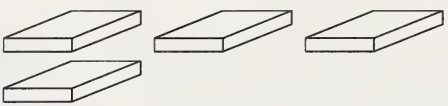
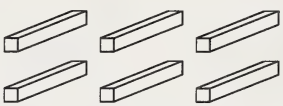
Suggested Answers to Exercise B

1. a. 523 + 464

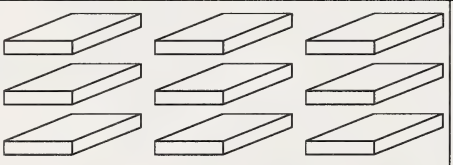
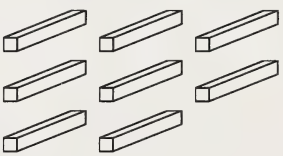
Step 1: Form the numbers.

Blocks	Flats	Longs	Units
			

and

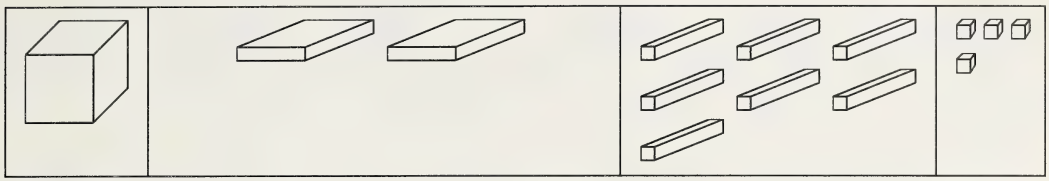
Step 2: Combine the pieces.

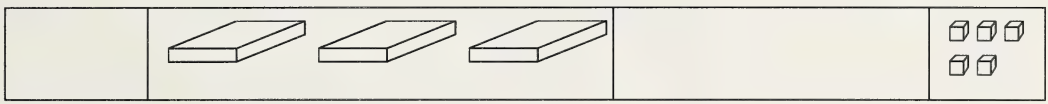
Number sentence: 523 + 464 = 987

b. 1274 + 305

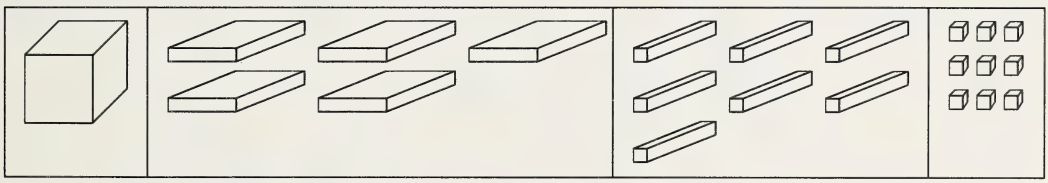
Step 1: Form the numbers.



and



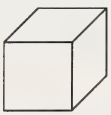
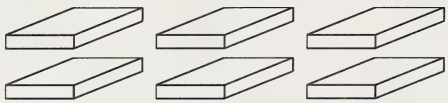
Step 2: Combine the pieces.



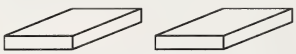
Number sentence: 1274 + 305 = 1579

c. 1603 + 200

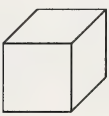
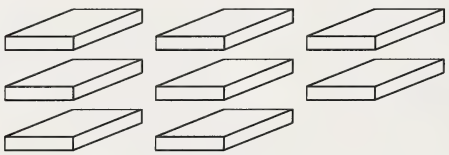
Step 1: Form the numbers.

Blocks	Flats	Longs	Units
			

and

Step 2: Combine the pieces.

Number sentence: 1603 + 200 = 1803

2. a. 29 + 6

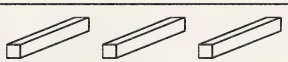
Step 1: Form the numbers.

Blocks	Flats	Longs	Units

and

Step 2: Combine the pieces.

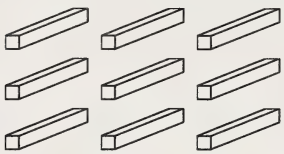
Step 3: Trade 10 units for 1 long.

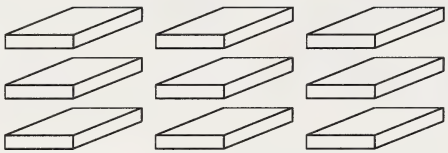
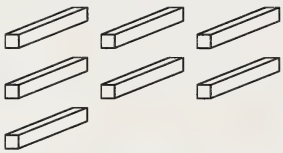
Number sentence: 29 + 6 = 35

b. 91 + 975

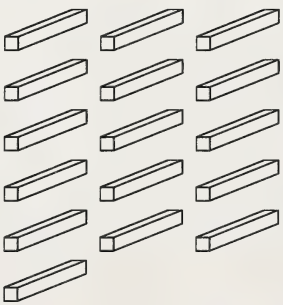
Step 1: Form the numbers.

Blocks	Flats	Longs	Units
			

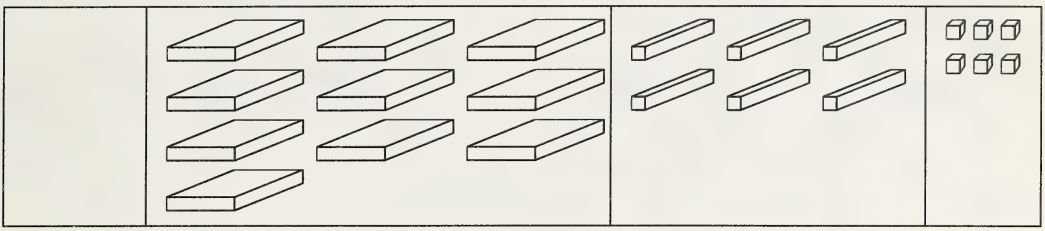
and

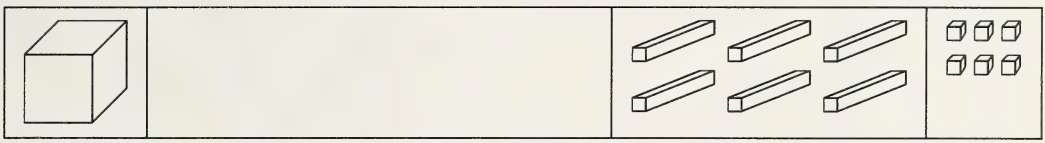
Step 2: Combine the pieces.

Step 3: Trade 10 longs for 1 flat.



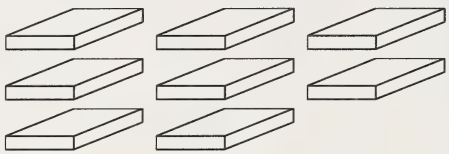
Step 4: Trade 10 flats for 1 block.



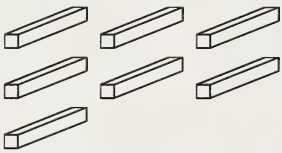
Number sentence: 91 + 975 = 1066

c. 805 + 75 + 292

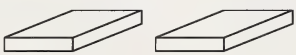
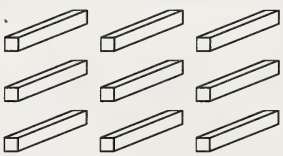
Step 1: Form the numbers.

Blocks	Flats	Longs	Units
			

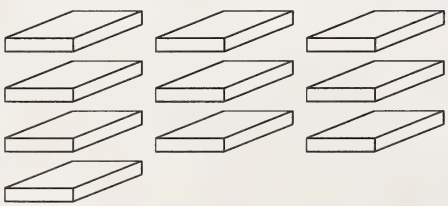
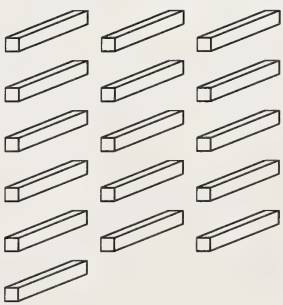
and

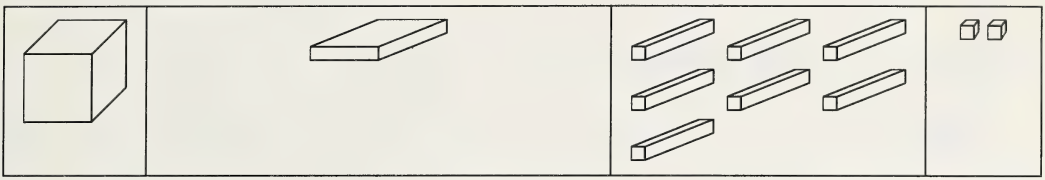
and

Step 2: Combine the pieces.

Step 3: Trade 10 units for 1 long. Trade 10 longs for 1 flat. Trade 10 flats for 1 block.

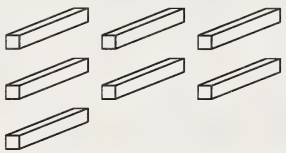
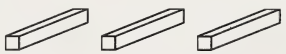


Number sentence: 805 + 75 + 292 = 1172

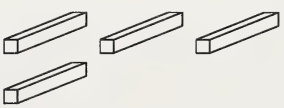
Suggested Answers to Exercise C

1. a. 77 – 35

Step 1: Form the numbers.

Blocks	Flats	Longs	Units
			
			

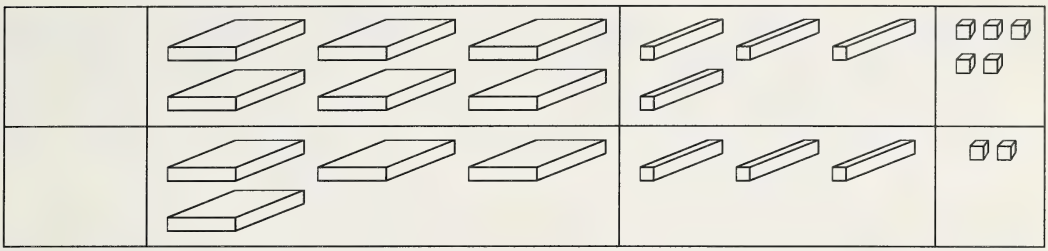
Step 2: Take away the required pieces.

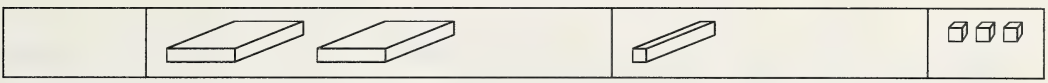
Number sentence: 77 – 35 = 42

b. 645 – 432

Step 1: Form the numbers.



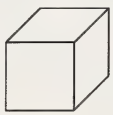
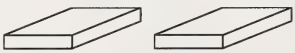
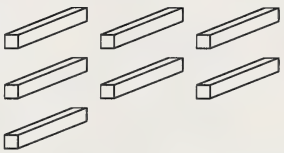
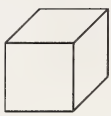
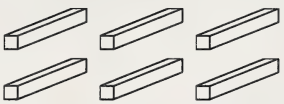
Step 2: Take away the required pieces.



Number sentence: 645 – 432 = 213

c. 1278 – 1166

Step 1: Form the numbers.

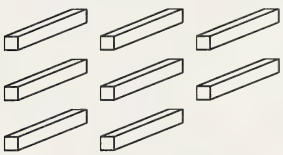
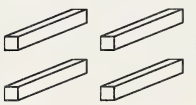
Blocks	Flats	Longs	Units
			
			

Step 2: Take away the required pieces.

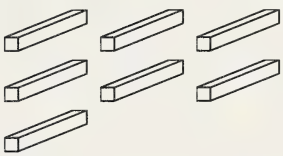
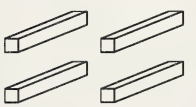
Number sentence: 1278 – 1166 = 112

2. a. 81 – 54

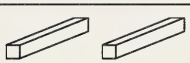
Step 1: Form the numbers.

Blocks	Flats	Longs	Units
			
			

Step 2: Trade 1 long for 10 units.

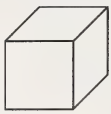
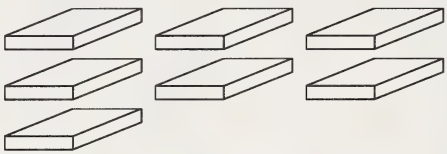
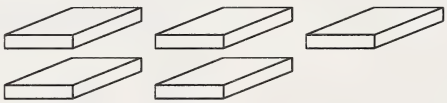
Step 3: Take away the required pieces.

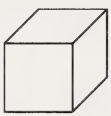
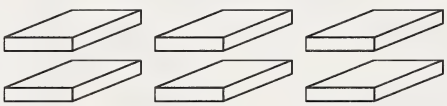
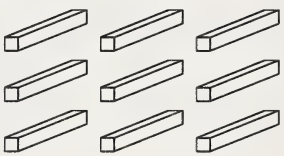
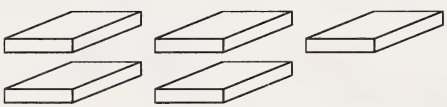
Number sentence: 81 – 54 = 27

b. 1708 – 529

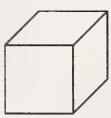
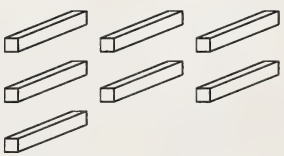
Step 1: Form the numbers.

Blocks	Flats	Longs	Units
			
			

Step 2: Trade 1 flat for 10 longs. Now trade 1 long for 10 units.

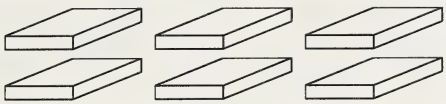
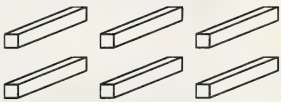
Step 3: Take away the required pieces.

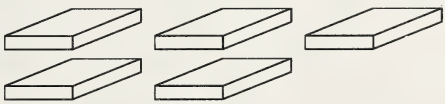
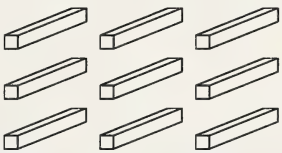
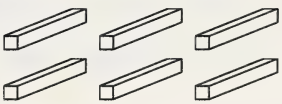
Number sentence: 1708 – 529 = 1179

c. 600 – 68

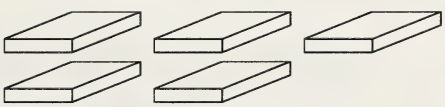
Step 1: Form the numbers.

Blocks	Flats	Longs	Units
			
			

Step 2: Trade 1 flat for 10 longs. Now trade 1 long for 10 units.

Step 3: Take away the required pieces.

Number sentence: 600 – 68 = 532

Suggested Answers to Exercise D

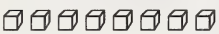
1. a. 4×2

Step 1: Think about the meaning of multiplication.

4×2 can mean 2 groups of 4

Step 2: Arrange the pieces into 2 groups of 4.

Step 3: Combine the pieces.



Step 4: Write the number sentence.

$4 \times 2 = 8$

b. 20×4

Step 1: Think about the meaning of multiplication.

20×4 can mean 4 groups of 20

Step 2: Arrange the pieces into 4 groups of 20.

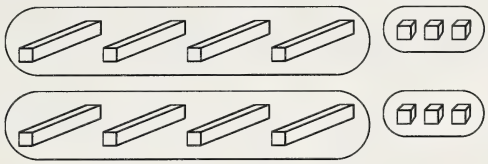
Step 3: Combine the pieces.

Step 4: Write the number sentence.

$20 \times 4 = 80$

b. 43×2 $40 \times 2 + 3 \times 2$

Step 1: Form 2 groups of 40 and 2 groups of 3.



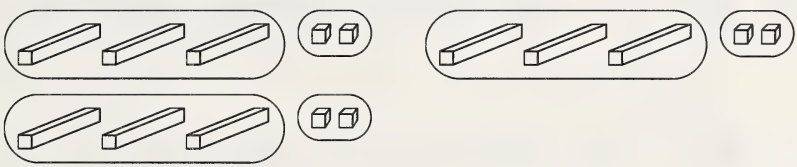
Step 2: Combine the pieces.

Step 3: Write the number sentence.

$43 \times 2 = 86$

d. $32 \times 3 = 30 \times 3 + 2 \times 3$

Step 1: Form 3 groups of 30 and 3 groups of 2.



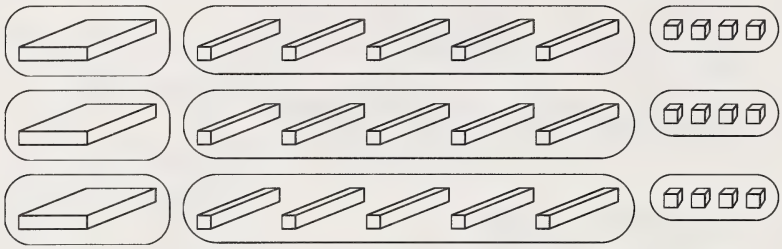
Step 2: Combine the pieces.

Step 3: Write the number sentence.

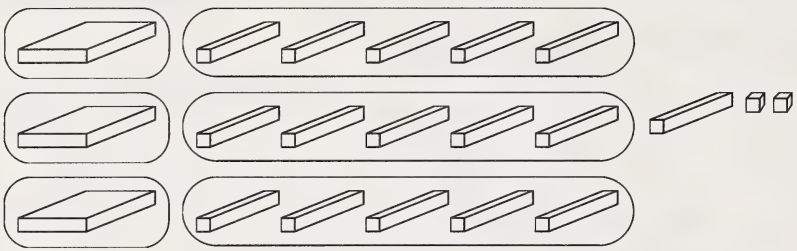
$32 \times 3 = 96$

2. a. 154 × 3

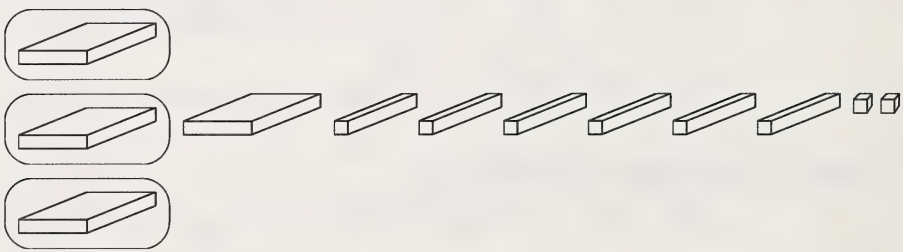
Step 1: Form 3 groups of 100, 3 groups of 50 and 3 groups of 4.



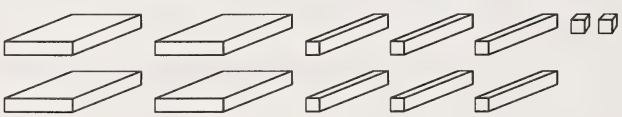
Step 2: Begin with 3 groups of 4. Trade 10 units for 1 long.



Step 3: Move to 3 groups of 5 longs. There are now 16 longs. Trade 10 longs for 1 flat.



Step 4: Finally, consider 3 groups of 3 flats. There are now 4 flats.

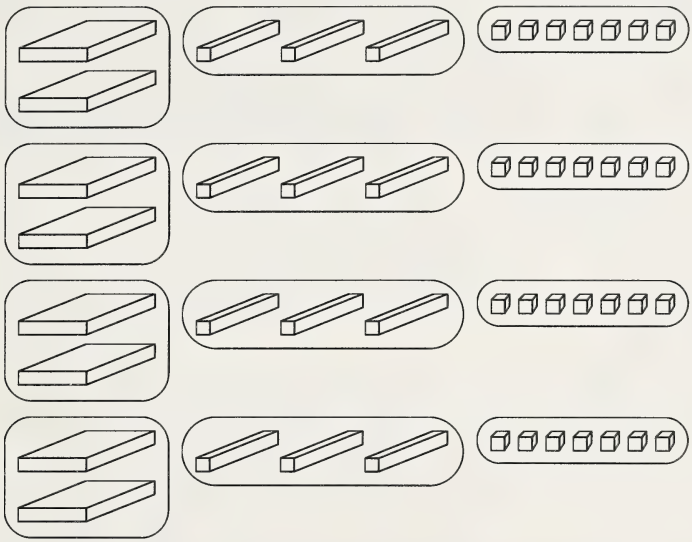


Step 5: Write a number sentence.

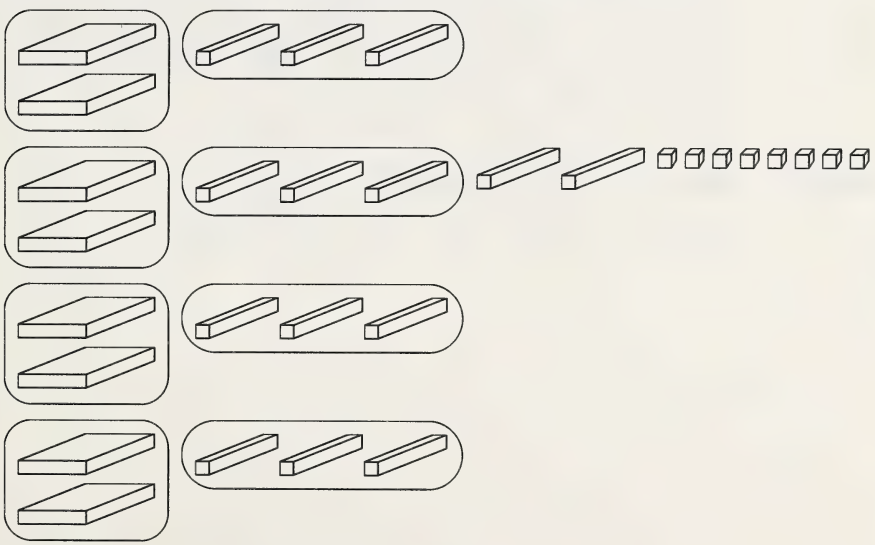
154 × 3 = 462

b. 237 × 4

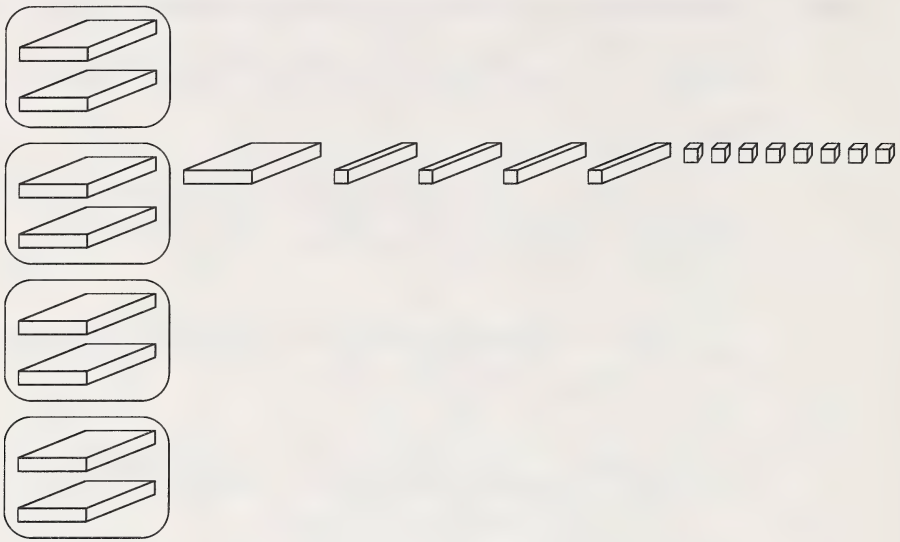
Step 1: Form 4 groups of 200, 4 groups of 30, and 4 groups of 7.



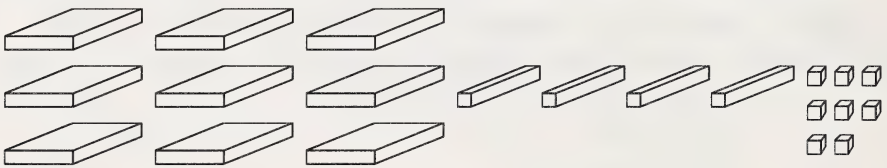
Step 2: Begin with 4 groups of 7. Trade 20 units for 2 longs.



Step 3: Now consider 4 groups of 3 longs. There are 14 longs altogether. Trade 10 longs for 1 flat.



Step 4: Finally, consider 4 groups of 2 flats. There are 9 flats altogether.

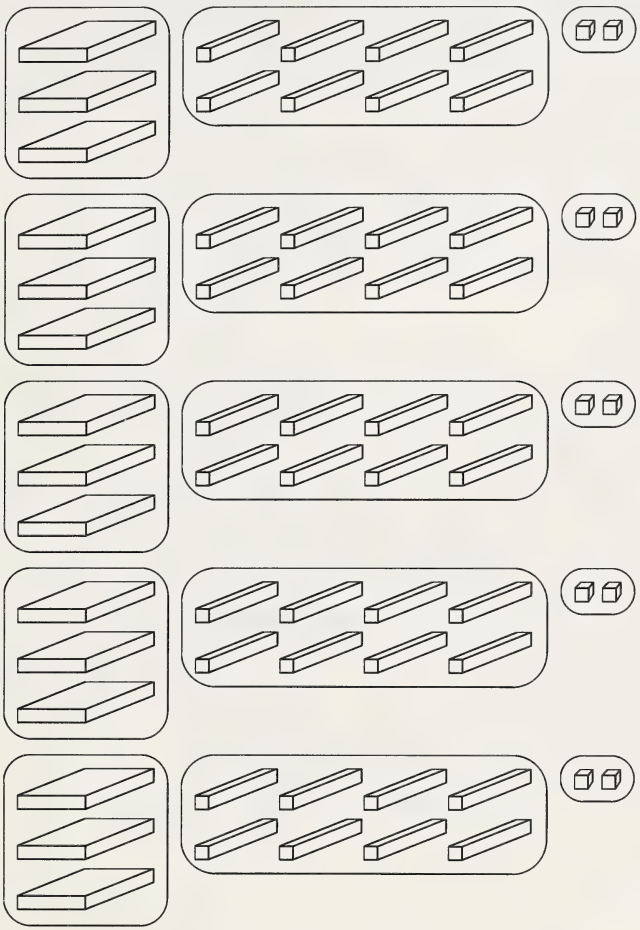


Step 5: Write the number sentence.

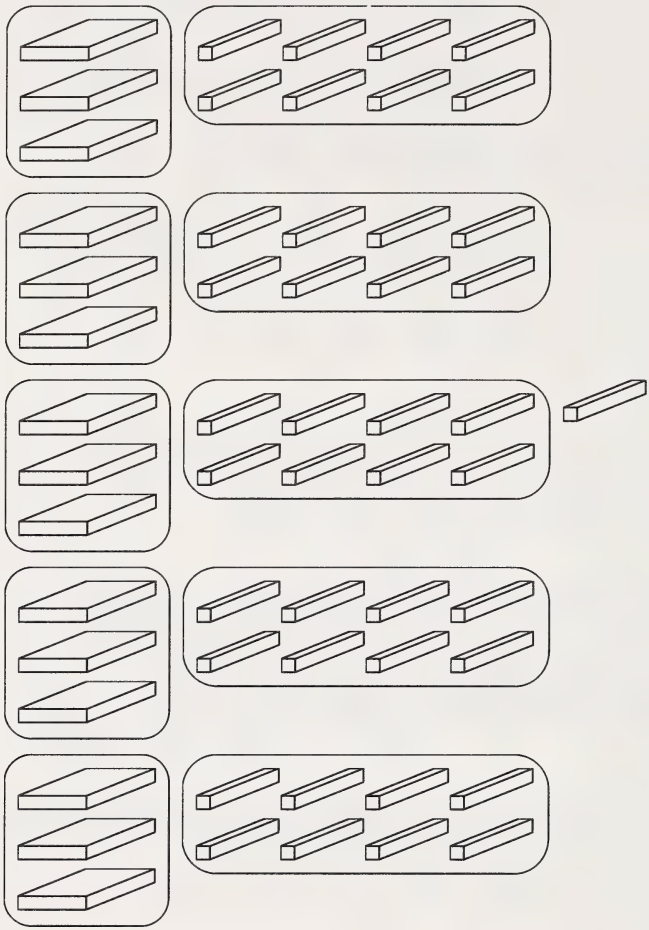
$237 \times 4 = 948$

c. 382 × 5

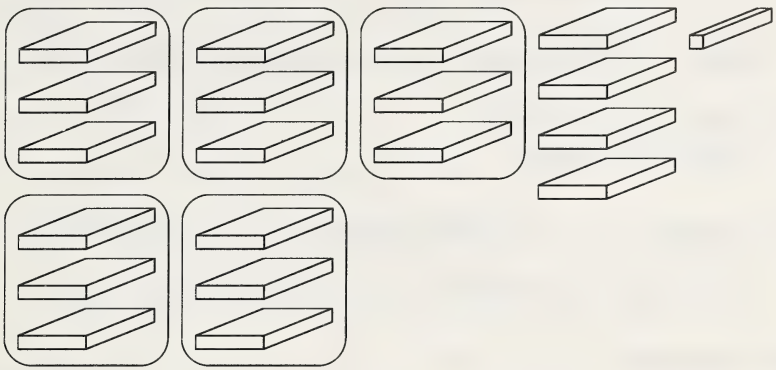
Step 1: Form 5 groups of 300, 5 groups of 80 and 5 groups of 2.



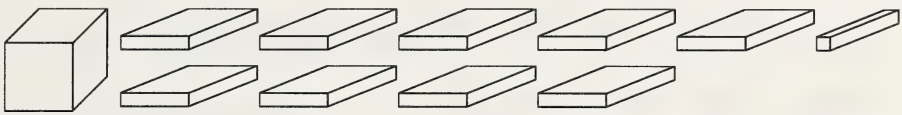
Step 2: Begin with 5 groups of 2. Altogether there are 10 units. Trade 10 units for 1 long.



Step 3: Now consider 5 groups of 80. Altogether there are 41 longs. Trade 40 longs for 4 flats.



Step 4: Finally, consider 5 groups of 300. Altogether there are 19 flats. Trade 10 flats for 1 block.



Step 5: Write the number sentence.

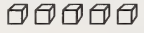
$382 \times 5 = 1910$

Suggested Answers to Exercise E

1. a. 8 ÷ 4

8 ÷ 4 means "In 8 there are how many groups of 4?"

Step 1: Form the number 8.



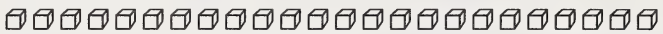
Step 2: Arrange the pieces into groups of 4.

Number sentence: 8 ÷ 4 = 2

b. 24 ÷ 6

24 ÷ 6 means "In 24 there are how many groups of 6?"

Step 1: Form the number 24.



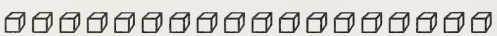
Step 2: Arrange the pieces into groups of 6.

Number sentence: 24 ÷ 6 = 4

c. 18 ÷ 3

18 ÷ 3 means "In 18 there are how many groups of 3?"

Step 1: Form the number 18.



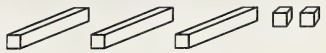
Step 2: Arrange the pieces into groups of 3.

Number sentence: 18 ÷ 3 = 6

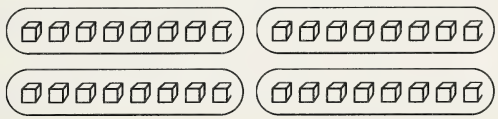
2. a. $32 \div 8$

$32 \div 8$ means "In 32 there are how many groups of 8?"

Step 1: Form the number 32.



Step 2: Arrange the pieces into groups of 8.

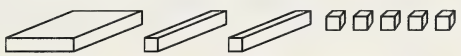


Number sentence: $32 \div 8 = 4$

b. $125 \div 5$

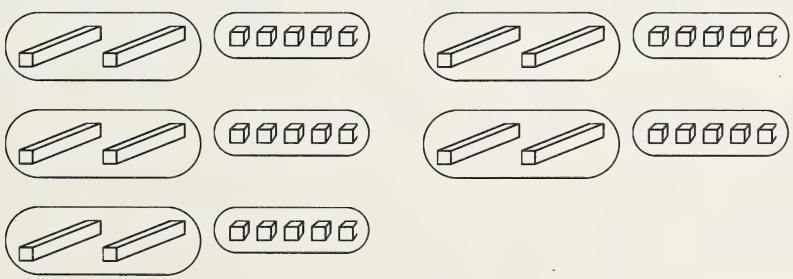
$125 \div 5$ means "5 groups of how many?"

Step 1: Form the number 125.

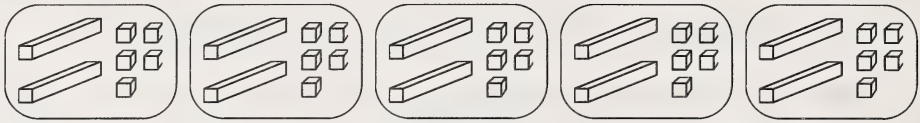


Step 2: You cannot divide 1 flat into 5 groups. Trade 1 flat for 10 longs.

Step 3: You can group the longs into 5 groups of 2 with 2 longs left over. Trade the 2 leftover longs for 20 units. Groups the 25 units into 5 groups of 5.



Step 4: In other words there are 5 groups of 25.



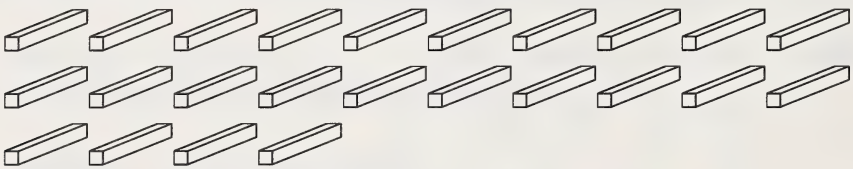
Number sentence: 125 ÷ 5 = 25

c. 240 ÷ 6

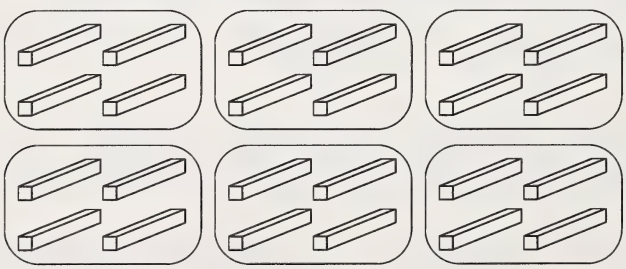
240 ÷ 6 means "6 groups of how many?"

Step 1: Form the number.

Step 2: You cannot divide 2 flats into 6 groups. Trade 2 flats for 20 longs.



Step 3: You can now group the 24 longs into 6 groups of 4.

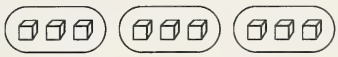


Number sentence: 240 ÷ 6 = 40

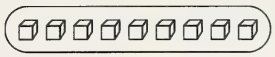
Suggested Answers to Exercise F

1. a. Factors of 9

9 can mean 3 groups of 3



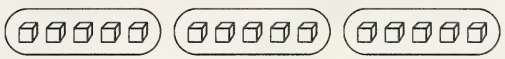
9 can mean 1 group of 9.



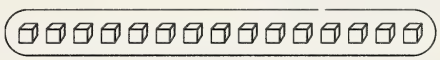
The factors of 9 are 1, 3, 9.

b. Factors of 15

15 can mean 3 groups of 5.



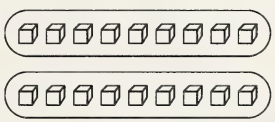
15 can mean 1 group of 15.



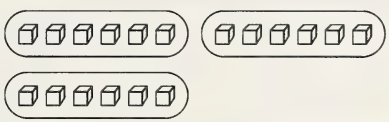
The factors of 15 are 1, 3, 5, 15.

c. Factors of 18

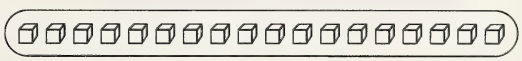
18 can mean 2 groups of 9.



18 can mean 3 groups of 6.



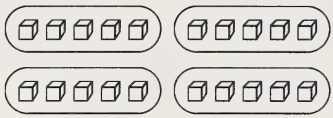
18 can mean 1 group of 18.



The factors of 18 are 1, 2, 3, 6, 9, 18.

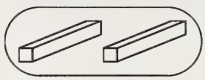
d. Factors of 20

20 can mean 4 groups of 5



20 can mean 2 groups of 10.

20 can mean 1 group of 20.

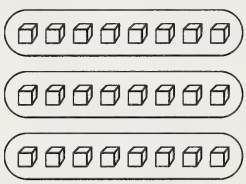


The factors of 20 are 1, 2, 4, 5, 10, 20.

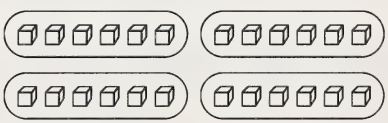
e. Factors of 24

24 can mean 2 groups of 12.

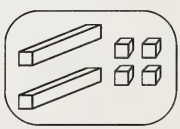
24 can mean 3 groups of 8.



24 can mean 4 groups of 6.



24 can mean 1 group of 24.



Factors of 24 are 1, 2, 3, 4, 6, 8, 12, 24.

Suggested Answers to Exercise G

a. 5

1 group of 5 5 groups of 1

5 is a prime number.

b. 6

1 group of 6 6 groups of 1 3 groups of 2 2 groups of 3

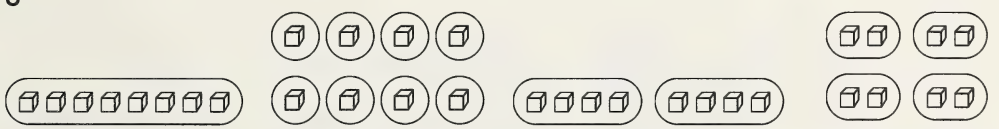
6 is a composite number.

c. 7

1 group of 7 7 groups of 1

7 is a prime number.

d. 8



1 group of 8 8 groups of 1 2 groups of 4 4 groups of 2

8 is a composite number.

e. 9

1 group of 9 9 groups of 1 3 groups of 3

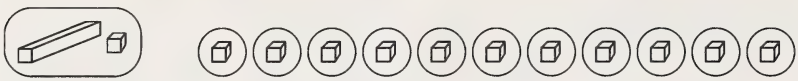
9 is a composite number.

f. 10

1 group of 10 10 groups of 1 5 groups of 2 2 groups of 5

10 is a composite number.

g. 11



1 group of 11 11 groups of 1

11 is a prime number.

h. 13

1 group of 13 13 groups of 1

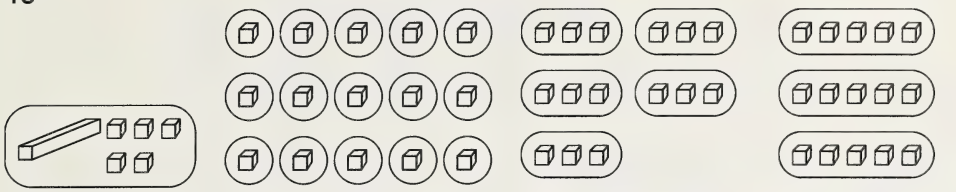
13 is a prime number.

i. 14

1 group of 14 14 groups of 1 7 groups of 2 2 groups of 7

14 is a composite number.

j. 15

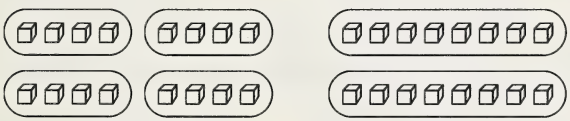


1 group of 15 15 groups of 1 5 groups of 3 3 groups of 5

15 is a composite number.

k. 16

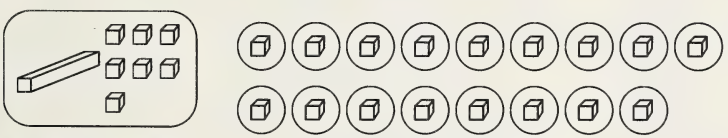
1 group of 16 16 groups of 1 8 groups of 2



4 groups of 4 2 groups of 8

16 is a composite number.

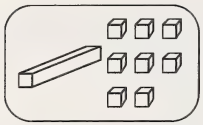
l. 17



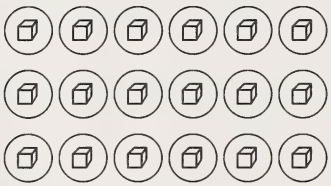
1 group of 17 17 groups of 1

17 is a prime number.

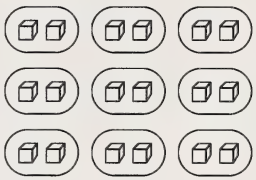
m. 18



1 group of 18

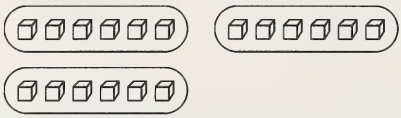


18 groups of 1

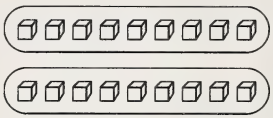


9 groups of 2

6 groups of 3



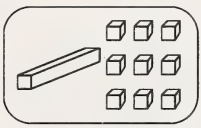
3 groups of 6



2 groups of 9

18 is a composite number.

n. 19

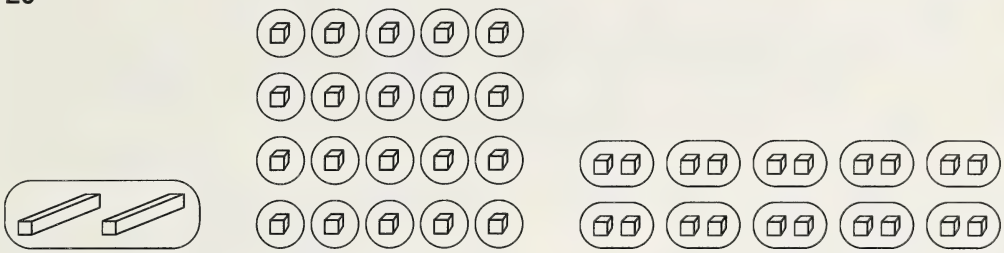


1 group of 19

19 groups of 1

19 is a prime number.

o. 20

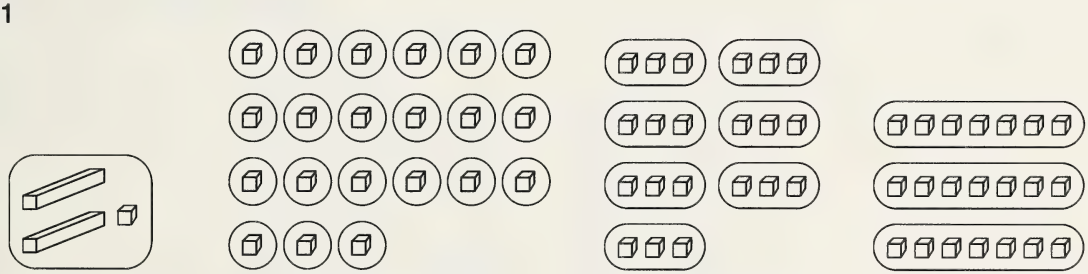


1 group of 20 20 groups of 1 10 groups of 2

5 groups of 4 4 groups of 5 2 groups of 10

20 is a composite number.

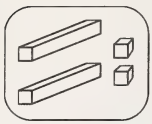
p. 21



1 group of 21 21 groups of 7 7 groups of 3 3 groups of 7

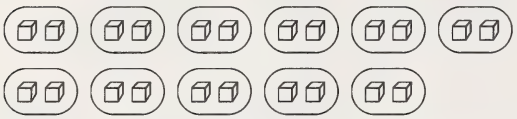
21 is a composite number.

q.

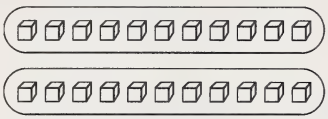


1 group of 22

22 groups of 1



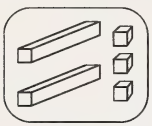
11 groups of 2



2 groups of 11

22 is a composite number.

r. 23

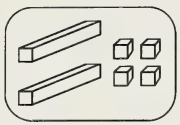


1 group of 23

23 groups of 1

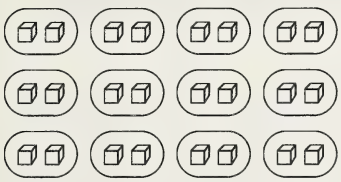
23 is a prime number.

s. 24

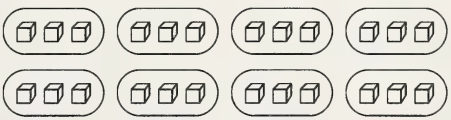


1 group of 24

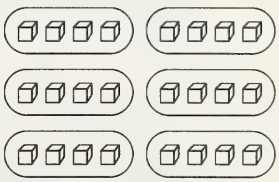
24 groups of 1



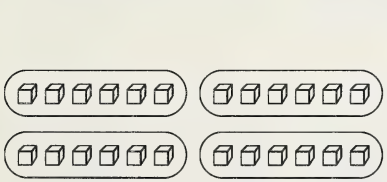
12 groups of 2



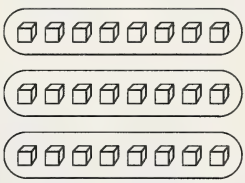
8 groups of 3



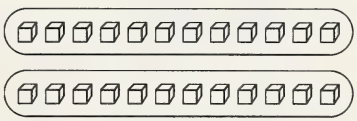
6 groups of 4



4 groups of 6



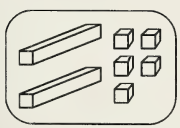
3 groups of 8



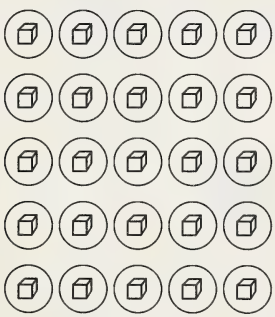
2 groups of 12

24 is a composite number.

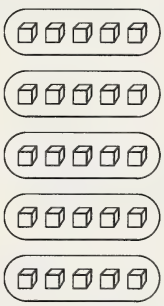
t. 25



1 group of 25



25 groups of 1



5 groups of 5

25 is a composite number.

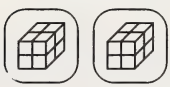
Suggested Answers to Exercise H

1. a. 2^1 means 1 group of 2, or 2.

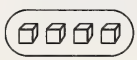
2^2 means 2 groups of 2^1, or 4.

2^3 means 2 groups of 2^2, or 8.

2^4 means 2 groups of 2^3, or 16.

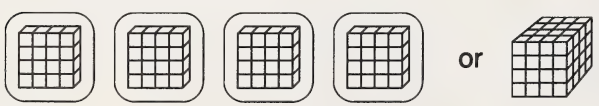


b. 4^1 means 1 group of 4, or 4.

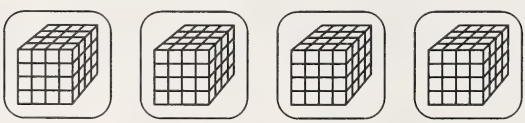


4^2 means 4 groups of 4^1, or 16.

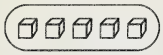
4^3 means 4 groups of 4^2, or 64.



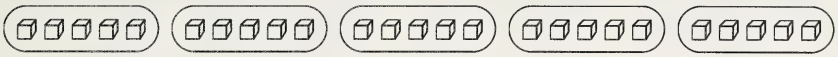
4^4 means 4 groups of 4^3, or 256.



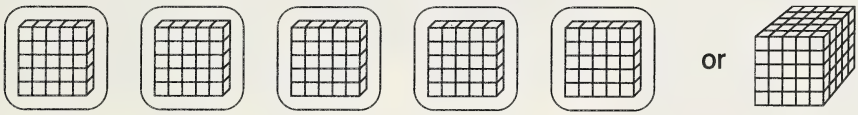
c. 5^1 means 1 group of 5, or 5.



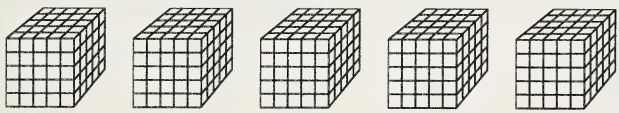
5^2 means 5 groups of 5^1, or 25.



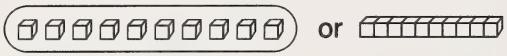
5^3 means 5 groups of 5^2, or 125.



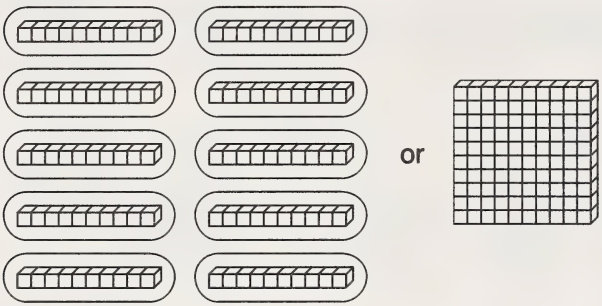
5^4 means 5 groups of 5^3, or 625.



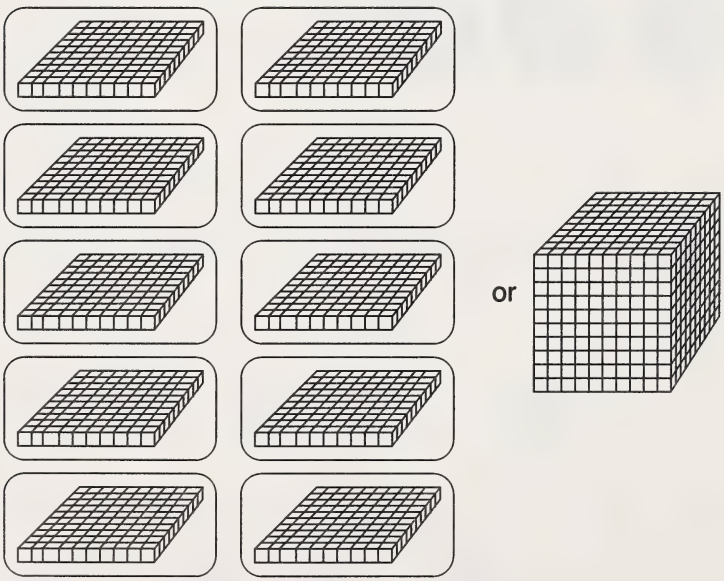
d. 10^1 means 1 group of 10, or 10.



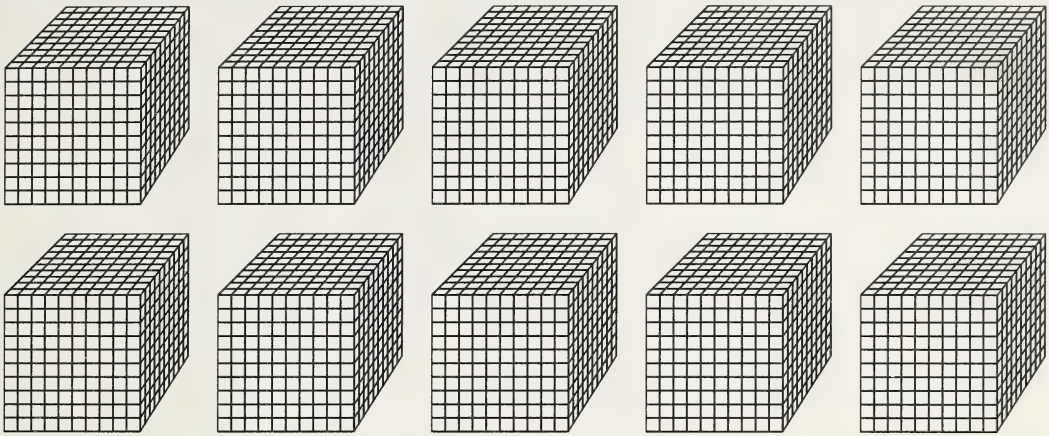
10^2 means 10 groups of 10^1, or 100.



10^3 means 10 groups of 10^2, or 1000.

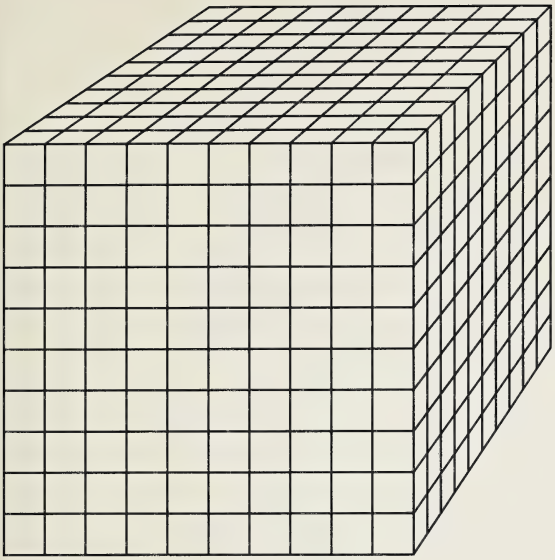


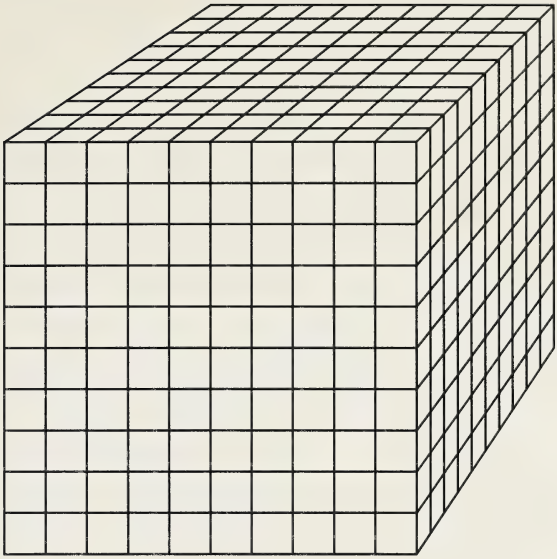
10^4 means 10 groups of 10^3, or 10 000.

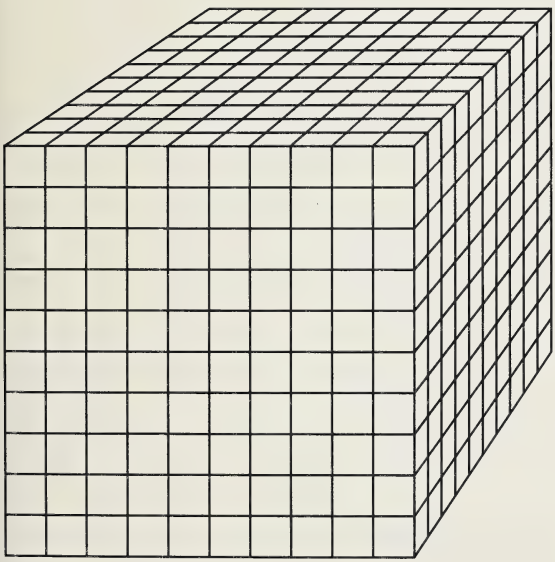


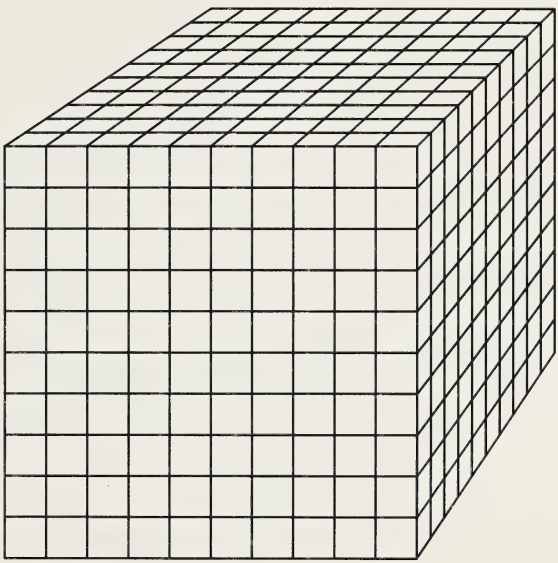
2. a. They can all be arranged in squares.

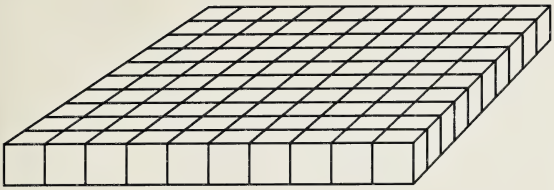
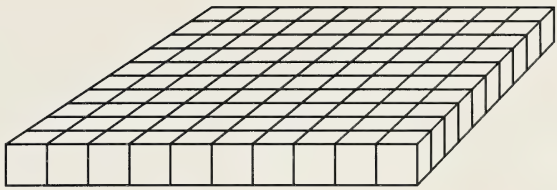
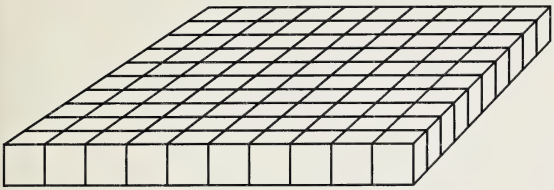
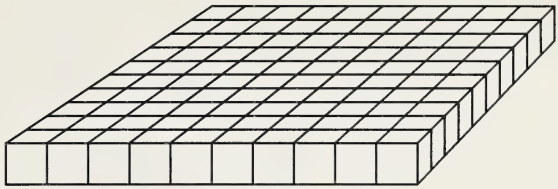
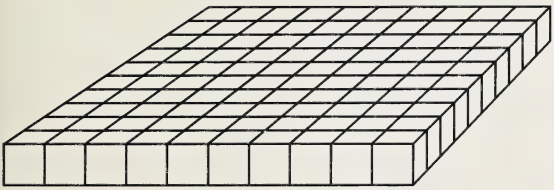
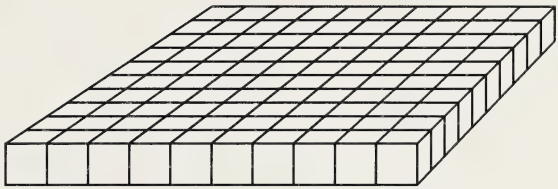
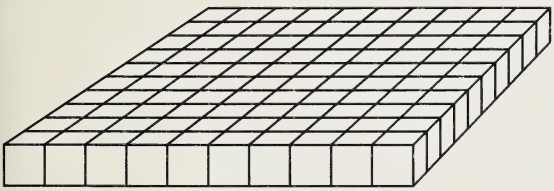
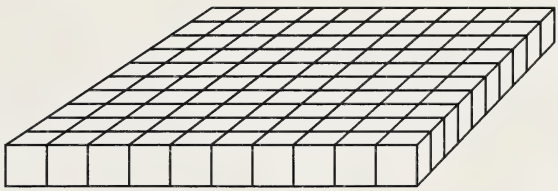
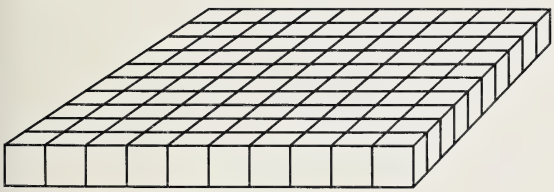
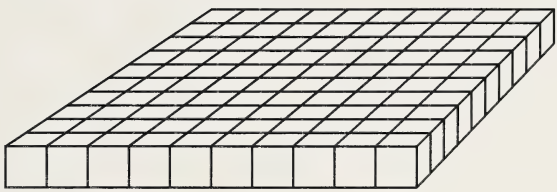
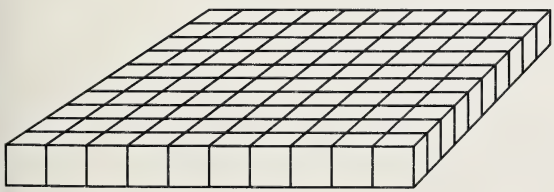
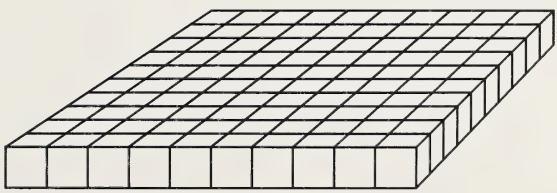
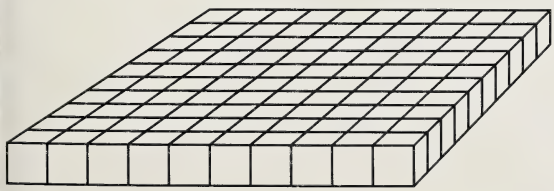
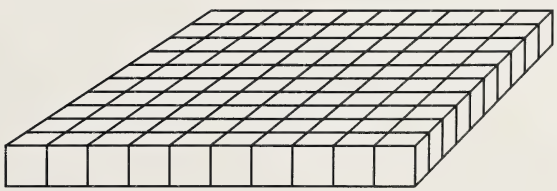
b. They can all be arranged in cubes.

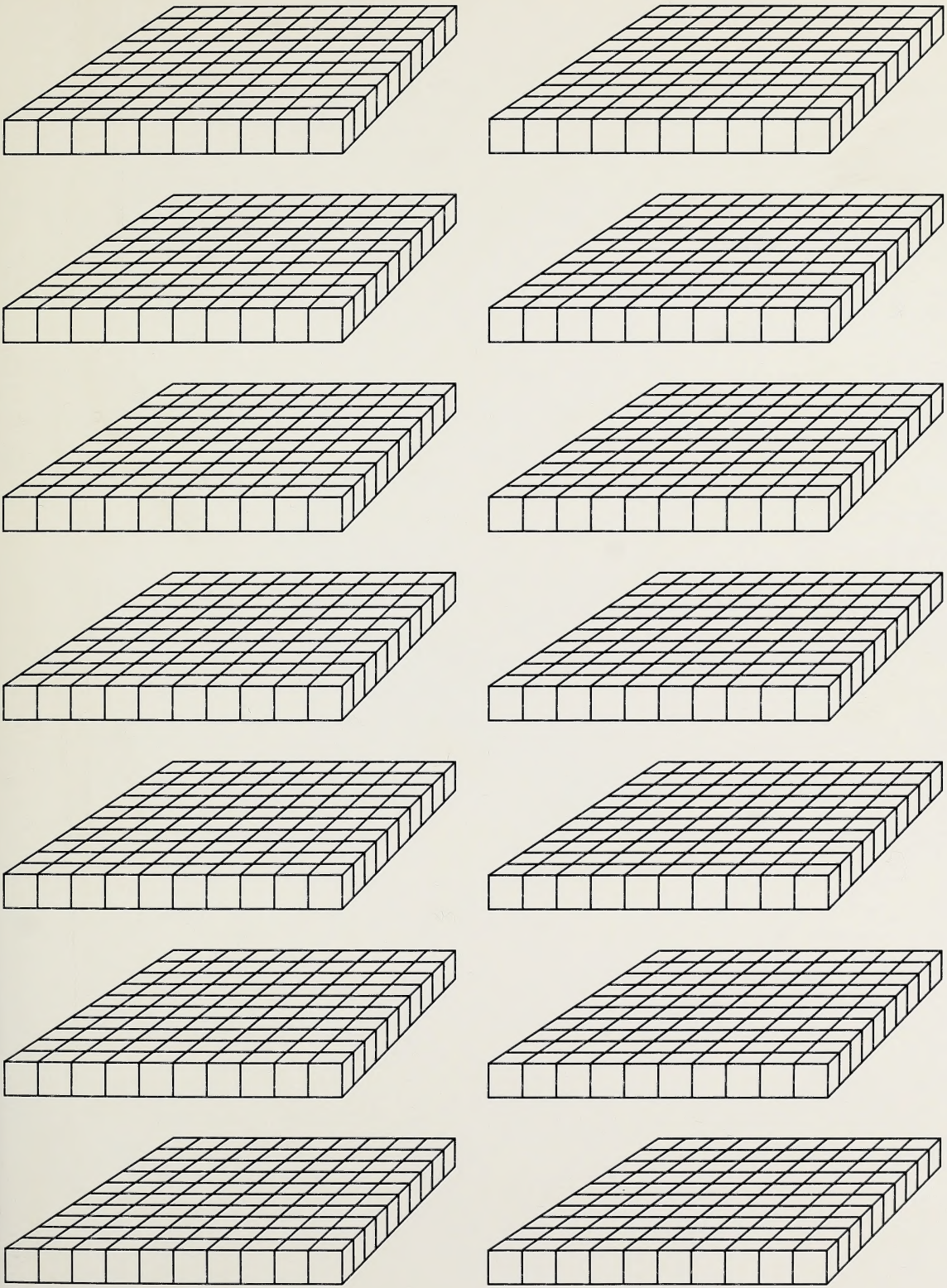


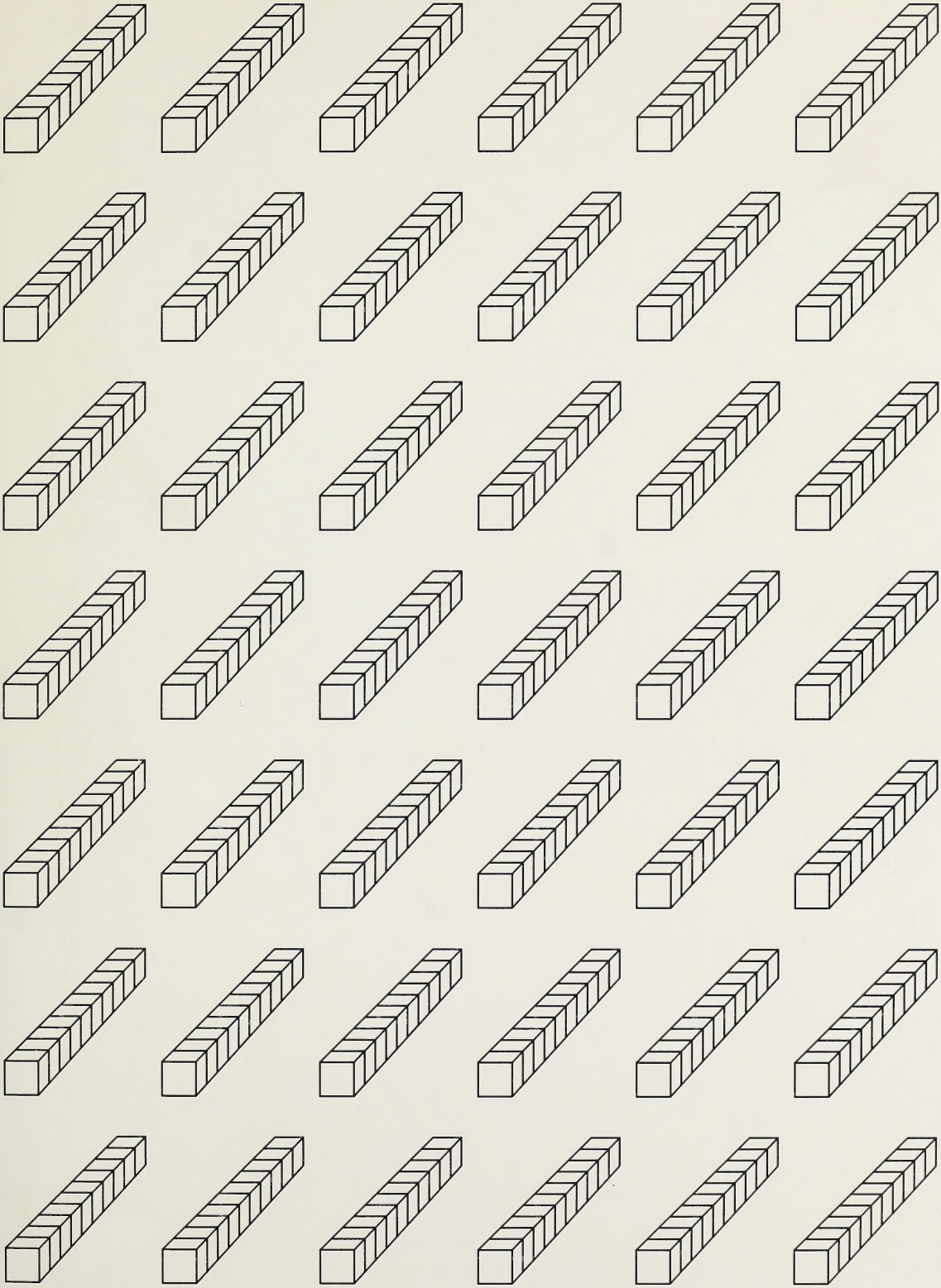










N.L.C. - B.N.C.
3 3286 10809664

This booklet cannot be purchased separately; it is available only with Module 2 of Mathematics 7.

Mathematics 7

9MA07L12

L.R.D.C.
Producer

FIRST EDITION
1991